9-1100-218-20/1

TECHNICAL MANUAL

ORGANIZATIONAL MAINTENANCE

M424 SPOTTING PROJECTILE

XM440 TRAINING PROJECTILE

This copy is a reprint which includes current pages from Changes 1 through 11.

Published under the authority of the Secretary of the Army.

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TECHNICAL MANUAL
ORGANIZATIONAL MAINTENANCE
M424 SPOTTING PROJECTILE
XM440 TRAINING PROJECTILE

CHANGE
NO. 11

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 3 June 1988

TM 9-1100-218-20/1, 30 June 1973, is changed as shown herein.

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The Adjutant General

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Chief of Staff

Distribution:

To be distributed in accordance with DA Form 12-35-R, requirements for Section III, Weapon System Literature applicable to Organizational, Projectile M422.

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ORGANIZATIONAL MAINTENANCE

M424 SPOTTING PROJECTILE

XM440 TRAINING PROJECTILE

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ORGANIZATIONAL MAINTENANCE

M424 SPOTTING PROJECTILE

XM440 TRAINING PROJECTILE

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The Adjutant General

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TECHNICAL MANUAL

ORGANIZATIONAL MAINTENANCE

M424 SPOTTING PROJECTILE

XM440 TRAINING PROJECTILE

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Major General, United States Army
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TECHNICAL MANUAL

ORGANIZATIONAL MAINTENANCE

M424 SPOTTING PROJECTILE

XM440 TRAINING PROJECTILE

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30 JUNE 1973
Change 11 - 3 June 1988

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Total number pages in this manual is 43, consisting of the following.

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A	11	14A and 14B Deleted	6
i and ii	9	15 and 16	6
1	11	16A and 16B	6
2	5	17 and 18	6
2A and 2B	9	18A and 18B Deleted	6
3	10	19	9
4	9	20	4
5	5	21	7
6	Original	22	Original
7	9	A1	Original
8	Original	A2 and A3	7
8A thru 8D	9	A4	4
9 and 10	Original	A4A and A4B Deleted	6
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SECTION 1

INTRODUCTION

1-1 SCOPE.

1-1.1 This manual contains instructions for organizational maintenance of the 8-inch M424 and M424A1 spotting projectiles and the XM440 training projectile.

1-1.2 Deleted.

1-1.3 These instructions are for U.S. Army units and non-U.S. NATO units. They are also applicable to conventional ammunition support units/activities of the Active Army, National Guard, and Army Reserve responsible for the support of the M424 projectile in CONUS.

1-1.4 In this manual, "support unit" is used to mean:

a. For non-U.S. NATO forces, it means the U.S. Army Artillery support detachment.

b. For U.S. units, it means the Army direct support organization.

1-1.5 This manual gives instructions in the usual order of doing them. But sometimes it is more convenient to do them in a different order. For example, the manual gives full disassembly instructions, but only partial disassembly may be needed to replace a defective component. Here is the rule to follow: Operations may be done in a different order than the manual says when it is safe and when no required tests or inspections are left out.

1-1.6 Non-U.S. NATO units shall notify the support unit of defective equipment and of recommendations for improving this manual.

1-2 FORMS, RECORDS, AND REPORTS.

Instructions for preparation and submission of required records and reports by U.S. Army units are contained in TB 9-1100-803-15 and command implementing instructions.

1-3 NATIONAL STOCK NUMBER.

The national stock number (NSN) can be obtained by adding "-00-" after the first four digits of the federal stock number (FSN). The FSN will be changed to the NSN throughout the manual on a convenience basis. Physical change of federal stock number marking to national stock number will be accomplished when missing, incorrect, or illegible markings are touched up or restenciled.

1-4 REPORTING OF EQUIPMENT MANUAL IMPROVEMENTS.

Report of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to Commander, US Army Armament, Munitions and Chemical Command, ATTN: AMSMC-MAY-T (D), Picatinny Arsenal, New Jersey 07806-5000.

SECTION 2

DESCRIPTION

2-1 GENERAL.

2-1.1 The M424 and M424A1 spotting projectiles are used for airburst registration in conjunction with war reserve M422 projectile. The M424 and M424A1 projectiles are identical in appearance and function, but differ slightly in internal design.

2-1.2 The XM440 training projectile is a not-to-be-fired training aid designed to train non-U.S. NATO firing batteries in operations concerned with war reserve projectiles.

2-1.3 The projectiles have an as-fired weight of 243 pounds, a diameter of 8 inches, and a length of 37 inches. Their weight, shape, and center of gravity are the same as those of the M422 projectile.

2-2 M424 SPOTTING PROJECTILE.

2-2.1 The M424 projectile (fig. 2-1) consists of a nose plug, ogive, mechanical time fuze, and a body assembly.

2-2.2 The projectile contains approximately 12 pounds of tritonal or composition B explosive charge and utilizes a mechanical time fuze which contains approximately 23 grams of tetryl and 1.56 grams of primer mix explosives.

2-2.3 The mechanical time fuze has the same type of timers used in the M422 projectile fuze. The fuze may be designated either as T-342, T-342E1, T-342E2, M543, M543A1, or M591 (XM591); the M543A1 and the M591 (XM591) have only two timers. These timers initiate a booster which in turn detonates the spotting charge.

2-2.4 The ogive is an aluminum fairing threaded to mate with the aluminum nose plug and body assembly. It houses the mechanical time fuze.

2-2.5 The M424 projectile, mechanical time fuze, and a rope sling are packaged in a wooden box.

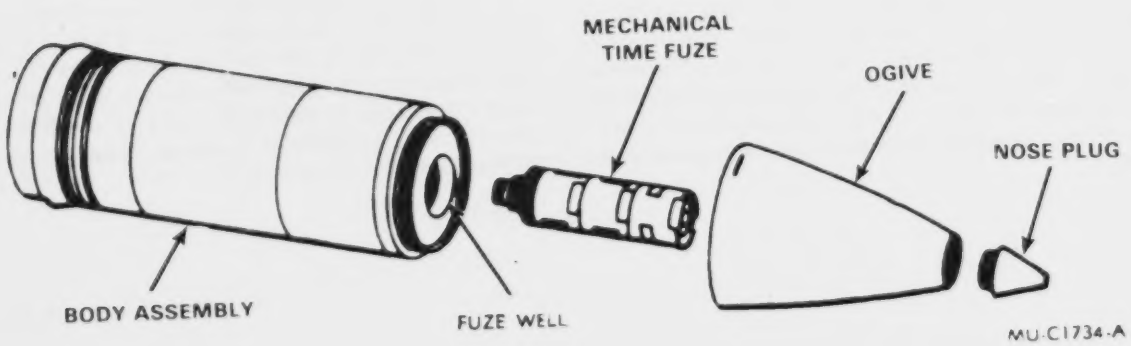

Figure 2-1 M424 Spotting Projectile

2-2.6 When the M424 projectile is used as a spotting round, there should be two M424's on hand for each M422.

2-2.7 Propelling charges will be used with M424 projectile in accordance with table 2-1.

TABLE 2-1
PROPELLING CHARGES

Howitzer	Primer	Zone 1	Zone 2	Zone 3	Zone 8
M115	MK2A4	M80 Bag 1	M80 Bag 1 & 2	M80 Bag 3	None
M110	M82 MK15 Mod 1 or 2	M80 Bag 1	M80 Bag 1 & 2 M3	M80 Bag 3 M3	None
M110A1/ M110A2	M82, MK15 Mod 1 or 2	M80 Bag 1	M80 Bag 1 & 2 M3	M80 Bag 3 M3	M188/ M188A1

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2-3 XM440 TRAINING PROJECTILE.

2-3.1 The XM440 training projectile (fig. 2-2) consists of a metal projectile, breechblock-fuze assembly, propellant charge, support disk, and base plug with preformed packing. Its components are similar to components of the M422 projectile except that it does not contain dashpots and that inert components have been substituted for explosive components. Tightening of components during training operations will be limited to handtight. The projectile will not be placed in the loading rammer. The projectile, breechblock-fuze assembly, and propellant charge are permanently marked INERT.

2-3.1.1 The breechblock-fuze assembly contains three timers and an inert igniter. It is placed into the base of the projectile.

2-3.1.2 The propellant charge consists of an inert component to simulate propellant, housed in a container designed with a well in its center to accommodate the igniter of the breechblock-fuze assembly.

2-3.1.3. The support disk is a round metal disk, perforated with several holes, which supports the propellant charge in the projectile.

2-3.1.4 The base plug is a round metal plug which threads into the base of the projectile and provides a seal. The preformed packing is shipped on the base plug.

2-3.2 Components of the XM440 training projectile are packaged in two containers: the projectile case (package 1 of 2) and the accessory parts case (package 2 of 2).

2-3.2.1 The projectile case contains the projectile and its packaging material.

2-3.2.2 The accessory parts case contains the breechblock-fuze assembly, propellant charge, support disk, preformed packing, and the base plug.

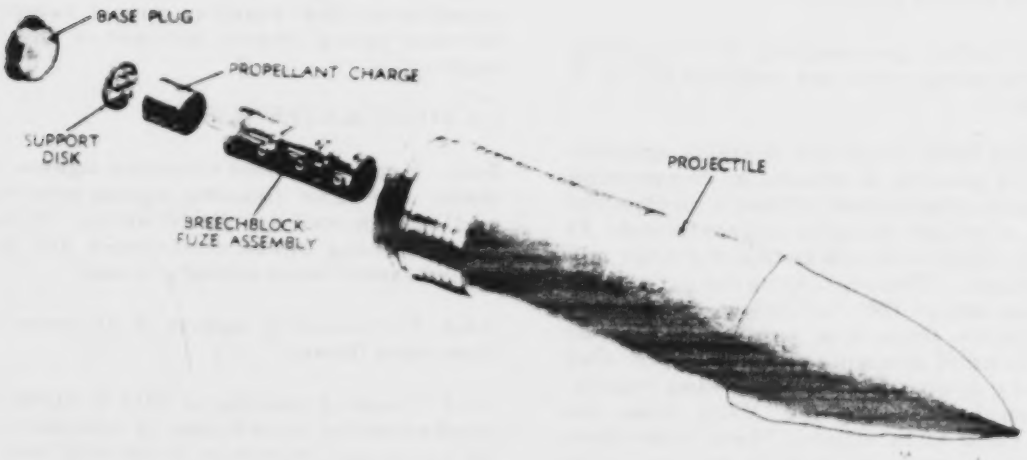

Figure 2-2 XM440 Training Projectile

SECTION 3

SAFETY

3-1 GENERAL.

3-1.1 The safety procedures presented in this section are the minimum prescribed for personnel responsible for handling these projectiles.

3-1.2 Units shall not tamper with or disassemble any components of the projectile other than those covered by this manual.

3-1.3 Requirements may be augmented by local directives to cover conditions peculiar to a particular area of operation.

3-1.4 In the event of an accident and/or incident, refer to command implementing instructions for required actions.

3-1.5 In case of fire, follow procedures outlined in applicable command directives.

3-1.6 Inspect all material handling equipment and tools visually before first use each day for damage and wear which might result in an unsafe condition. Do not use materials which fail this inspection.

3-2 EXPLOSIVE SAFETY.

General safety precautions for handling explosive components are outlined in TM 9-1300-206.

3-2.1 The M424 projectile contains approximately 12 pounds of tritonal or composition B explosive charge and utilizes a mechanical time fuze which contains approximately 23 grams of tetryl and 1.56 grams of primer mix explosives. Prevent exposure to temperatures above 130° F or below - 30° F. This temperature limit also applies to M80 or M188 (Zone 8) propelling charges used with the M424 projectile. The following restrictions apply to firing the M424 from the M110A1 and A2 howitzers. These restrictions apply in peacetime but do not apply in combat emergency.

a. Firing from M110A1 howitzers with M188 M188A1 propelling charge is prohibited.

b. Firing from M110A1 or M110A2 with M80 propelling charge or from M110A2 with M188/M188A1 charge is limited to a new cannon only. A new cannon is defined as one which has at least one-half tube life remaining.

3-2.3 Explosive components used in the M422 war reserve projectile are located in the propellant charge (2.8 ounces of M2 propellant) and breechblock-fuze assembly (approximately 11.6 grams black powder and 1.56 grams primer mix).

3-3 MECHANICAL SAFETY.

3-3.1 Visually inspect all material handling equipment and tools before first use each day for damage and wear which might result in an unsafe condition.

3-3.2 Before first use each day, verify that DA Label 80 calibration certification on torque wrenches or torque screwdrivers is current.

3-3.3 When using a torque wrench or torque screwdriver, do not select a wrench or screwdriver that requires torque values to be read below twenty percent of the full scale value.

3-4 TOXIC MATERIALS.

3-4.1 Vapors of most cleaning agents are toxic. Use toxic cleaning agents sparingly and only in well ventilated areas. Be sure that cleaning agent containers are kept closed except when actually in use.

3-4.2 Use cleaning agents in an area free from open flames.

3-4.3 Cleaning compound (MIL-C-81302) is a nonflammable solvent and is considered to be nontoxic. However, it should only be used in well ventilated areas since it will displace oxygen. This compound should not be used near heat or open flame since the products of decomposition are toxic.

SECTION 4

INSPECTION

4-1 GENERAL.

4-1.1 Maintenance required as a result of inspection shall be performed in accordance with section 7.

4-1.2 The only marking dimension to be inspected is the location of center of gravity. The exact size, location, orientation, color, of other markings are not critical if content is correct and functionally clear.

4-1.3 Inspect disassembled components to assure lubrication is in accordance with section 7.

4-2 RECEIPT INSPECTION.

This inspection is performed on material received for any purpose except repair or rebuild from any source other than the vendor or user. Its purpose is to certify, after shipment, the suitability of the material for retention in the stockpile. Perform this inspection as follows:

4-2.1 Check seals on containers. If seals are missing, broken, or have been tampered with, and the defect cannot be accounted for, report the defect in accordance with local directives.

4-2.2 Check container markings for legibility and correctness.

4-2.3 Check container for damage such as broken humidity indicator window, dents more than 1 inch deep, cracks, or deformation.

4-2.4 Check humidity indicators. Change desiccant if reading is 40 percent or more.

4-3 INSPECTION OF M424 AND XM440 PROJECTILES.

Perform periodic inspection of projectiles at intervals not to exceed four years, using table 4-1.

TABLE 4-1

INSPECTION OF M424 AND XM440 PROJECTILES

Item	Inspection point	Action to be taken
1. Projectile Exterior	a. Marking incorrect or illegible.	Touch up.
	b. Scraped paint, corrosion, or foreign matter.	Clean.
	c. Protective band: loose or worn staples, loose or missing ribs, unserviceable cord (XM440 only).	Replace band or unserviceable cord.
	d. Rotating band scraped, abraded, or has foreign matter. (Install protective band.)	Remove scrapes and abrasions; clean.
	e. Damaged threads.	Repair threads.
2. Ogive (M424 only)	Damaged threads.	Repair threads.
3. Fuze Well Cups (M424 only)	Exudation.	Reject projectile.
4. Mechanical Time Fuze (M424 only)	a. Container marking incorrect or illegible.	Touch up.
	b. Container rusted through or punctured.	Reject fuze.
5. Base Plug (XM440 only)	Damaged threads.	Repair threads.
6. Breechblock-Fuze Assembly (XM440 only)	a. Container marking incorrect or illegible.	Touch up.
	b. Container rusted through or punctured.	Reject fuze.
7. Propellant Charge (XM440 only)	a. Marking incorrect or illegible.	Touch up.
	b. Punctured, rusted through, deformed to the extent to prevent assembly.	Reject propellant charge.
	c. Foreign material.	Clean.

SECTION 5

UNPACKAGING

5-1 GENERAL.

5-1.1 Remove packaging materials carefully to permit reuse.

5-1.2 If items are missing, notify support unit.

5-2 UNPACKAGING M424 SPOTTING PROJECTILE.

5-2.1 Unpackage projectile in accordance with figure 5-1. Remove mechanical time fuze container carefully. Place container in upright position or, if placed in horizontal position, and if necessary, chock to prevent rolling.

5-2.2 Remove rope sling and fasten it around the center of gravity of projectile (marked with painted white band).

5-2.3 Using rope sling and lifting equipment, if desired, raise projectile slowly from box.

5-2.4 Position end and intermediate supports so that end support (placed on its side) will support projectile just forward of rotating band and intermediate support will support projectile just aft of bourrelet. Lower projectile onto supports slowly. Remove rope sling and lifting equipment, if used, and place sling in box.

5-2.5 Remove ogive (fig. 5-1A) and set fuze timers (fig. 5-1B) as follows:

a. Using H4005 wrench, break thread bind between ogive and body assembly, while holding strap wrench to prevent rotation of body assembly.

b. Turn ogive counterclockwise by hand. Remove ogive and rubber gasket.

c. Assure plate and fuze well are not loose. Hand tighten if required.

d. Be sure that there is no exudation of high explosive in fuze well cup. If exudate is found, reject projectile.

e. If unpackaged fuze is known to have been dropped, reject fuze.

f. Open fuze container and remove fuze. Reject fuze if not used within 24 hours.

g. Using H4003 fuze setter, turn knob counterclockwise until required full second graduation on upper dial is alined with zero indicator line of fixed scale. To obtain 0.1 second accuracy, continue slowly turning knob counterclockwise and aline next mark on upper dial with 0.1 second required.

h. If you pass the required fuze setting, continue turning upper dial beyond zero to the correct setting.

i. Set remaining timers. Timer settings for all timers must be identical. Have a second person verify that required timer setting is identical on all timers.

5-2.6 Install fuze (fig. 5-1C) as follows:

a. Thread fuze clockwise, by hand, into fuze well of body assembly until tight.

b. If fuze will not assemble into fuze well, reject fuze. If replacement fuze will not assemble into fuze well, reject projectile.

c. Install ogive, with nose plug attached, clockwise on body assembly. Do not install rubber gasket; gasket is used only for storage configuration to prevent ogive and body from seizing. Tighten ogive using H4005 wrench on ogive and strap wrench on body assembly. Using M18 wrench, tighten nose plug clockwise. Visually assure that there is metal-to-metal contact between ogive and body section; if not, remove fuze and reject projectile.

d. Remove protective band.

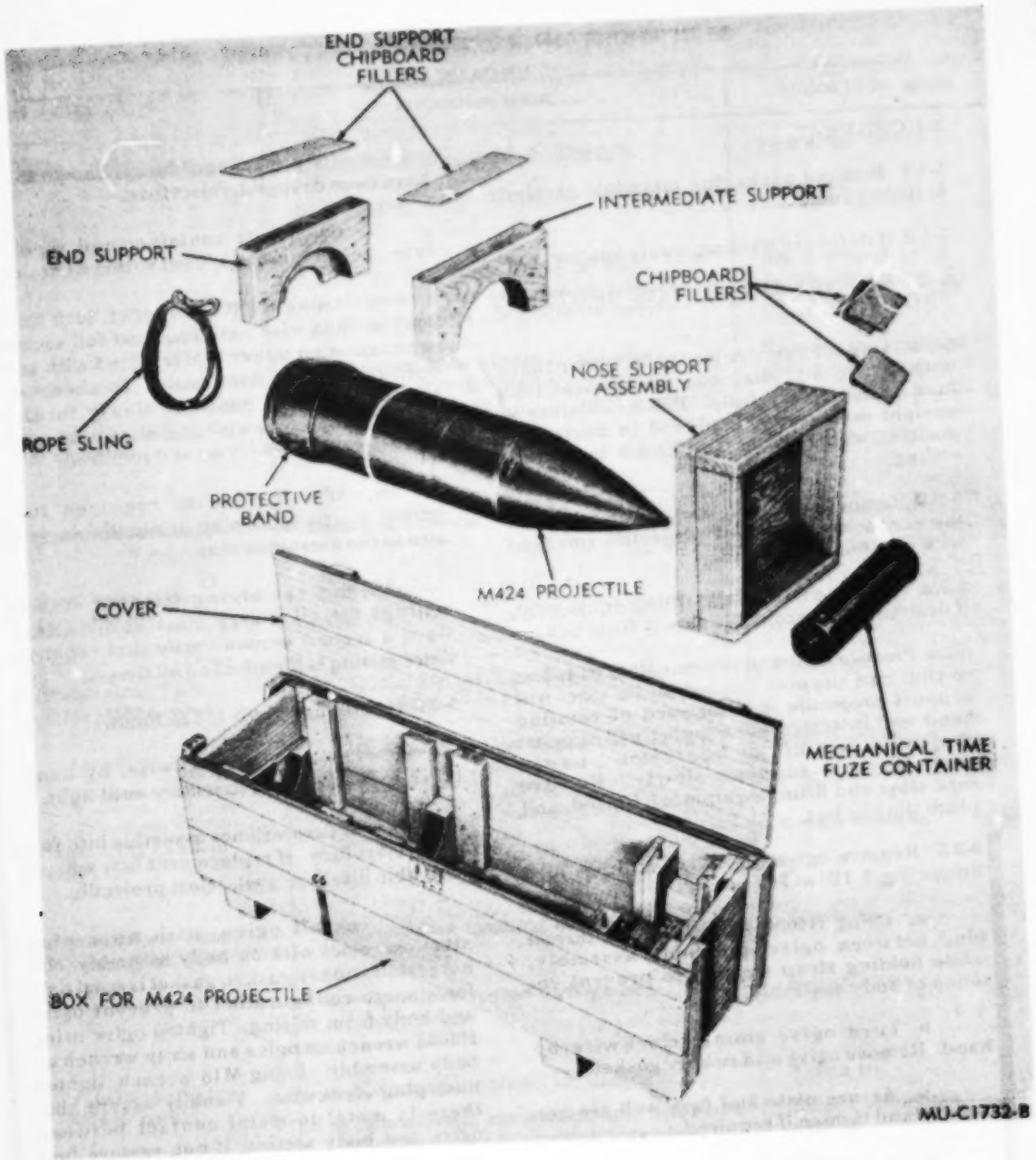

Figure 5-1 M424 Projectile Box with Contents

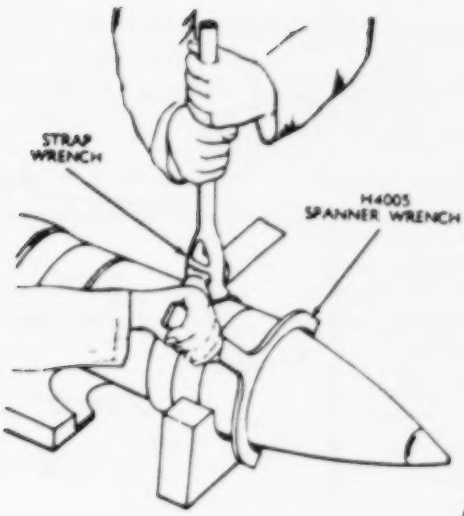

Figure 5-1A Removing Ogive

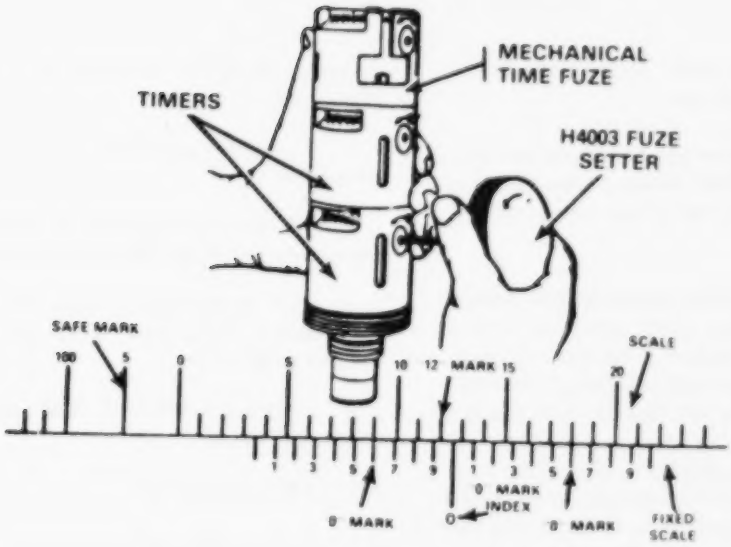

Figure 5-1B Setting Fuze Timers

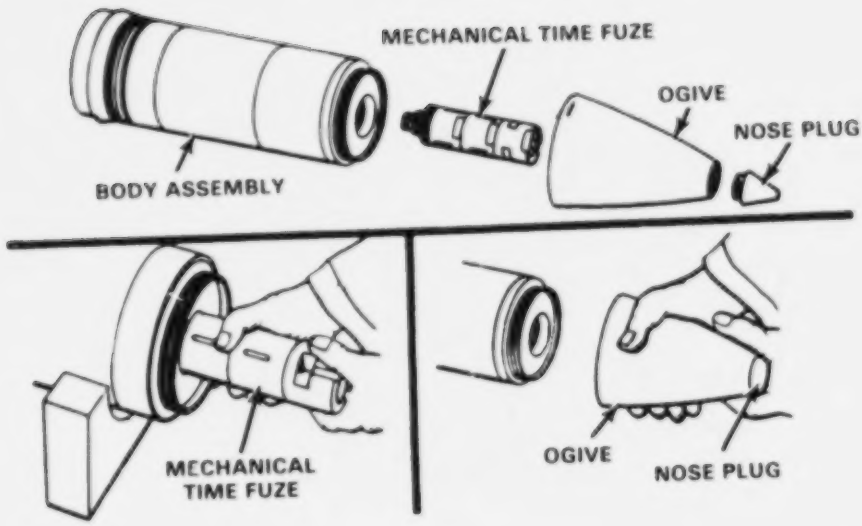

Figure 5-1C Installing Fuze

e. You are now ready to load the M424 projectile into the howitzer.

5-2.7 Do all other necessary operations. Then get ready to fire, unless you have a problem such as changed firing or cancelled firing.

a. Changed firing procedures apply when a projectile has been readied for a firing mission, but either a technical condition or malfunction requires delay. In case of malfunction, higher authority will decide whether to change or cancel firing. A changed fire mission requires resetting fuze timers before loading projectile into howitzer. If a changed fire mission is received, remove ogive and fuze from projectile, set timers to change timer settings, and install fuze and ogive.

b. Cancelled firing procedures apply when a projectile has been readied for a firing mission, but higher authority has determined to cancel firing. Do the following:

(1) If rammed, fire projectile if possible.

(2) Do not attempt to remove projectile using conventional ammunition procedures.

(3) If firing is not possible, notify Explosive Ordance Disposal personnel. Reject projectile.

5-3 UNPACKAGING XM440 TRAINING PROJECTILE.

5-3.1 PROJECTILE.

5-3.1.1 Equalize pressure and remove cover (fig. 5-2).

5-3.1.2 Using at least two persons:

a. Place projectile case in horizontal position.

b. Position rubber cushion at open end of projectile case.

c. Raise closed end of case slowly until short insert is exposed, then lower case to horizontal position.

d. Place projectile case in vertical position with base of projectile resting on rubber cushion.

e. Lift and remove projectile case while at least one person steadies projectile.

f. Lower projectile to horizontal position.

5-3.2 ACCESSORY PARTS.

a. Equalize pressure and remove container cover.

b. Remove container contents as shown in figure 5-3. Handle breechblock-fuze assembly container and propellant charge carefully. Place them where they cannot be bumped or dropped and, if necessary, chock to prevent rolling.

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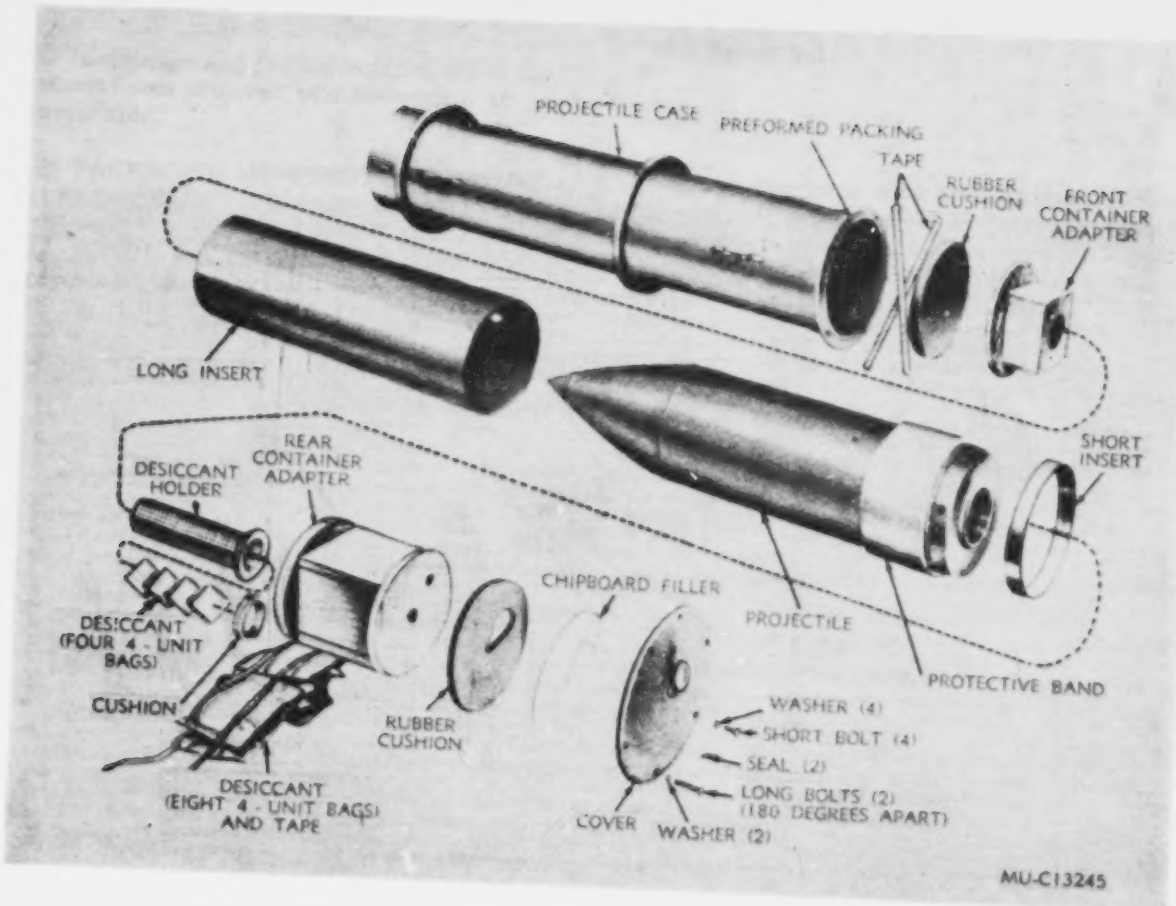


Figure 5-2 XM440 Projectile Case with Contents

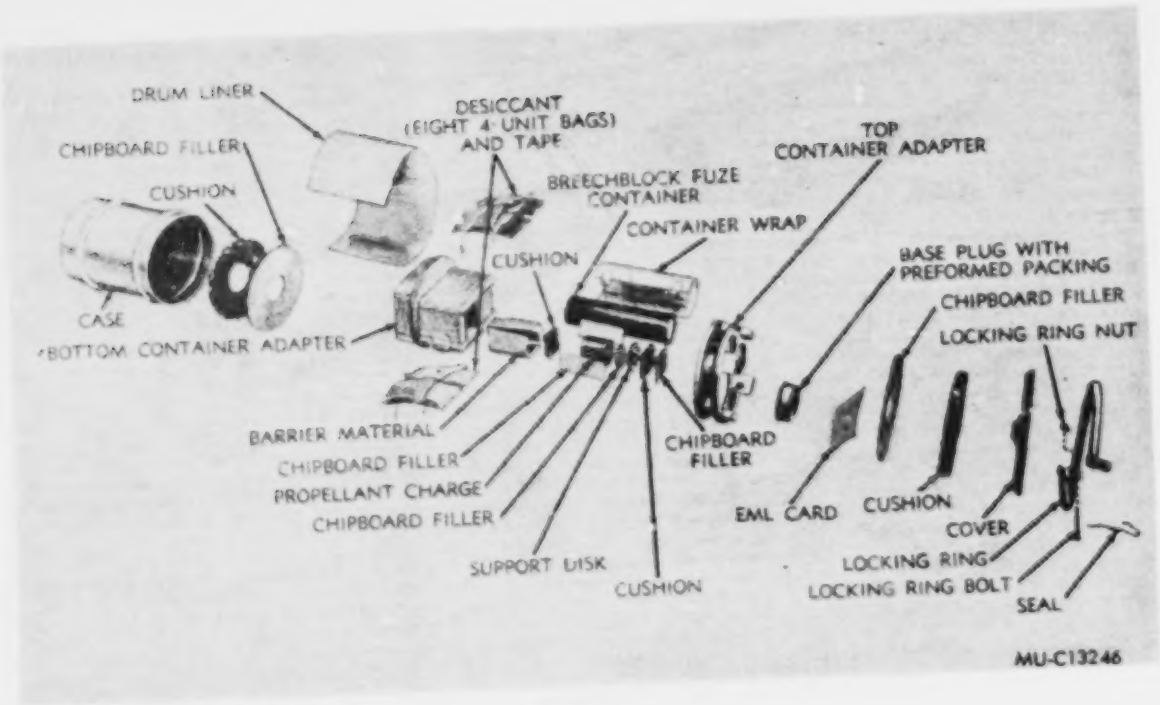


Figure 5-3 XM440 Projectile Accessory Parts Case with Contents

SECTION 6

PACKAGING

6-1 GENERAL.

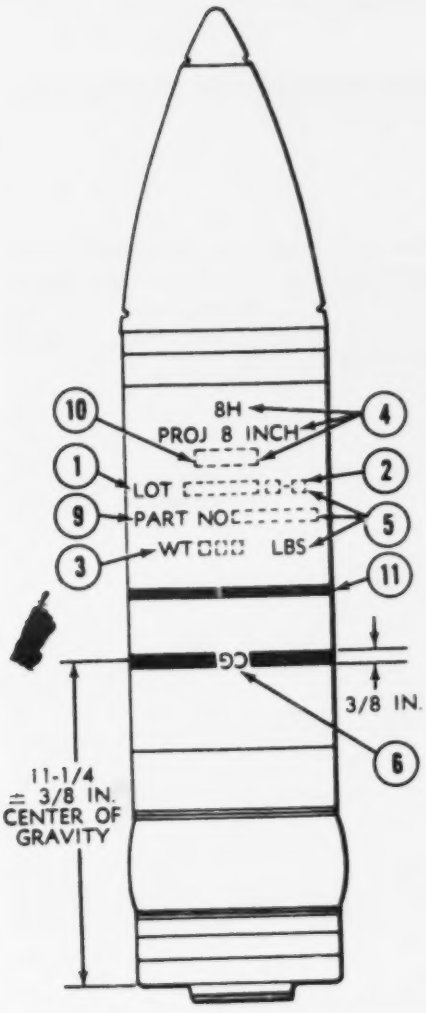
The containers and packages from which the material was removed will be reused, if serviceable.

6-2 PACKAGING M424 SPOTTING PROJECTILE.

6-2.1 Table 6-1 lists contents of the M424 projectile box.

6-2.2 Assure that projectile marking agrees with figure 6-1.

6-2.3 Using rope sling and lifting equipment, if desired, raise projectile over box, install nose support assembly on projectile, lower projectile slowly into box (fig. 5-1). Remove lifting equipment, if used.



MARKING INSTRUCTIONS

(1) - INSERT LOT NUMBER.

(2) - INSERT DATE LOADED (MONTH AND YEAR).

(3) - INSERT ACTUAL WEIGHT INCLUDING NOMINAL WEIGHT OF FUZE, LESS WEIGHT OF PROTECTIVE BAND.

(4) - MARKING WILL BE 1 IN. HIGH.

(5) - MARKING WILL BE 1/2 IN. HIGH.

(6) - MARKING WILL BE 3/8 IN. OR 1/2 IN. HIGH. CG STRIPE TO EXTEND 200 DEGREES MIN. AROUND PROJECTILE.

7 - MARKING WILL BE WHITE NO. 37875 STENCIL INK, SPEC TT-I-1795 OR ENAMEL, SPEC TT-E-516.

8 - EXTERIOR SURFACE OF PROJECTILE WILL BE O. D. NO. X34087 ENAMEL, SPEC TT-E-516.

(9) - INSERT PART NUMBER. SEE MARKING TABLE.

(10) - INSERT APPROPRIATE DESIGNATOR.

(11) - APPLY ONE 1-IN. BAND AT LOCATION SHOWN, USING 1-IN. YELLOW PRESSURE-SENSITIVE TAPE OR YELLOW NO. 33538 STENCIL INK, SPEC TT-I-1795, OR ENAMEL, SPEC TT-E-516.

MARKING TABLE

P/N	COMPOSITION
* 8787836-1	TRITONAL 80/20
8787836-2	COMPOSITION B, GRADE A
9241673	COMPOSITION B, GRADE A
* PROJECTILES WITH BASIC PART NO 8787836 WILL BE CHANGED TO 8787836-1	

NOTE:

OGIVE MARKING, WHICH SHOWS ARROWS (180 DEGREES APART) POINTING TO GASKET, WITH INSTRUCTION "REMOVE FLAT GASKET FROM THIS POINT WHEN PREPARING TO USE THIS PROJECTILE," MAY OR MAY NOT BE PRESENT. EITHER CONDITION IS ACCEPTABLE.

AR 200496-B

Figure 6-1 Marking of M424 Spotting Projectile

TABLE 6-1

CONTENTS OF M424 PROJECTILE BOX

Quantity	Part No.	Description
1	8787836-1* 8787836-2** 9241673**	Projectile, Shipping Assembly: M424 Projectile, Shipping Assembly: M424A1
1	8592955 8594379 10535728	Fuze MT: T-342, M543 Fuze MT: T-342E1, T-342E2, or M543A1 Fuze MT: M591 (XM591)
1	--------	Sling, Rope

*P/N 8787836-1 is for tritonal projectiles.
**P/N 8787836-2 and P/N 9241673 are for comp B projectiles.

6-2.4 Leave rope sling on projectile and place top halves of end and intermediate supports over projectile (fig. 6-2) and add chipboard fillers along ends of box, to assure a tight pack.

6-2.5 Assure that mechanical time fuze container marking agrees with figure 6-3. Insert container carefully into box and add chipboard fillers to assure a tight pack.

6-2.6 Assure that marking of projectile box agrees with figure 6-4. Close and secure box.

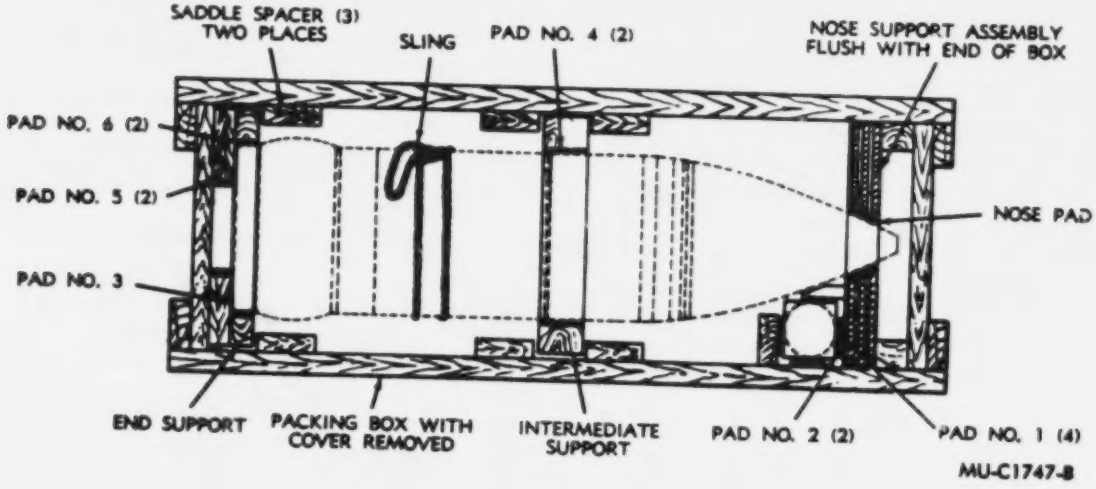
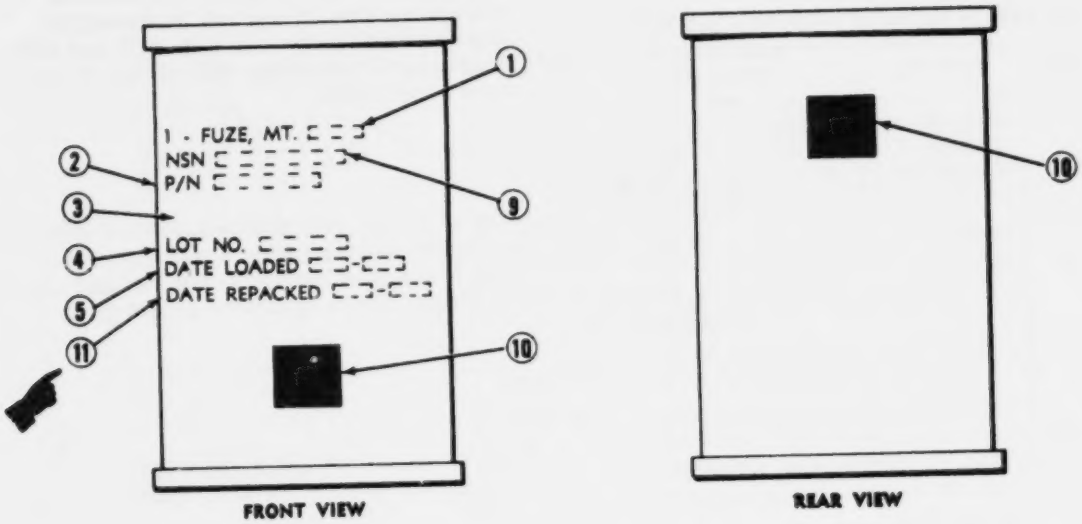


Figure 6-2 M424 Projectile Box - Cutaway View



MARKING INSTRUCTIONS

(1) - AS APPLICABLE, MARK APPROPRIATE M DESIGNATOR.

(2) - INSERT APPROPRIATE PART NUMBER.

(3) - SPACE FOR ONE LINE OF REWORK MARKING.

(4) - INSERT LOT NUMBER.

(5) - INSERT DATE LOADED (MONTH AND YEAR).

6 - MARKINGS WILL BE 1/4-INCH HIGH.

7 - EXTERIOR SURFACE OF THE CONTAINER WILL BE OLIVE DRAB NO. X34087 ENAMEL, SPEC TT-E-516.

8 - MARKING WILL BE WITH WHITE NO. 37875 STENCIL INK, SPEC TT-I-1795 OR ENAMEL, SPEC TT-E-516.

(9) - INSERT APPROPRIATE NATIONAL STOCK NUMBER.

(10) - APPLY TWO 2-INCH SQUARE PATCHES AT LOCATION SHOWN, USING YELLOW NO. 33538 STENCIL INK, SPEC TT-I-1795 OR ENAMEL, SPEC TT-E-516.

(11) - INSERT DATE REPACKED (MONTH AND YEAR).

DESIGNATOR	PART NUMBER	NATIONAL STOCK NUMBER
M591	10535728	1135-00-912-3465
T342, M543	8592955	1135-00-856-0396
T342E1, T342E2, M543A1	8594379	1135-00-856-0396

AR 200497-D

Figure 6-3 Marking of Mechanical Time Fuze Container

MARKING INSTRUCTIONS

1. SPACE FOR ONE LINE OF REWORK MARKING.
2. INSERT LOT NUMBER.
3. INSERT NATIONAL STOCK NUMBER. SEE MARKING CHART.
4. INSERT GROSS WEIGHT IN POUNDS TO NEAREST POUND.
5. MARKINGS WILL BE 1/2-IN. HIGH, EXCEPT AS NOTED.
6. MARK A 1×5-1/2 IN. STRIPE WITH THE LETTERS "CB" ABOVE THE STRIPE 1-IN. HIGH.
7. EXTERIOR SURFACE OF BOX WILL BE OLIVE DRAB NO. X34087 ENAMEL, SPEC TT-E-516.
8. MARKING WILL BE WHITE NO. 37875 STENCIL INK, SPEC TT-I-1795 OR ENAMEL, SPEC TT-E-516.
9. SHIPPING AND CUSTODIAL MARKING NOT SHOWN.
10. INSERT MEASUREMENTS TO THE NEAREST WHOLE OR HALF INCH. INSERT THE CUBICAL DISPLACEMENT TO THE NEAREST 1/10-CUBIC FOOT.
11. MARKING ON END OF BOX MAY BE 1/4 OR 1/2-IN. HIGH.
12. APPLY TWO 2-INCH SQUARE PATCHES AT LOCATION SHOWN, USING YELLOW NO. 33538 STENCIL INK, SPEC TT-I-1795 OR ENAMEL, SPEC TT-E-516.
13. APPLY ONE 2-INCH SQUARE PATCH AT LOCATION SHOWN AND ONE DIAGONALLY ON OPPOSITE END FROM THAT SHOWN, USING YELLOW NO. 33538 STENCIL INK, SPEC TT-I-1795 OR ENAMEL, SPEC TT-E-516.
14. APPLY ONE 2-INCH SQUARE PATCH AT LOCATION SHOWN AND ONE DIAGONALLY ON OPPOSITE END FROM THAT SHOWN, USING YELLOW NO. 33538 STENCIL INK, SPEC TT-I-1795 OR ENAMEL, SPEC TT-E-516.

MARKING CHART

NATIONAL STOCK NUMBER	PROJECTILE PART NUMBER	LOADING ASSEMBLY PART NUMBER
1320-00-689-2086	8787836-1	8811860-1
1320-00-856-1948	8787836-2	8811860-2
1320-00-179-4164	9241673	8811860-3

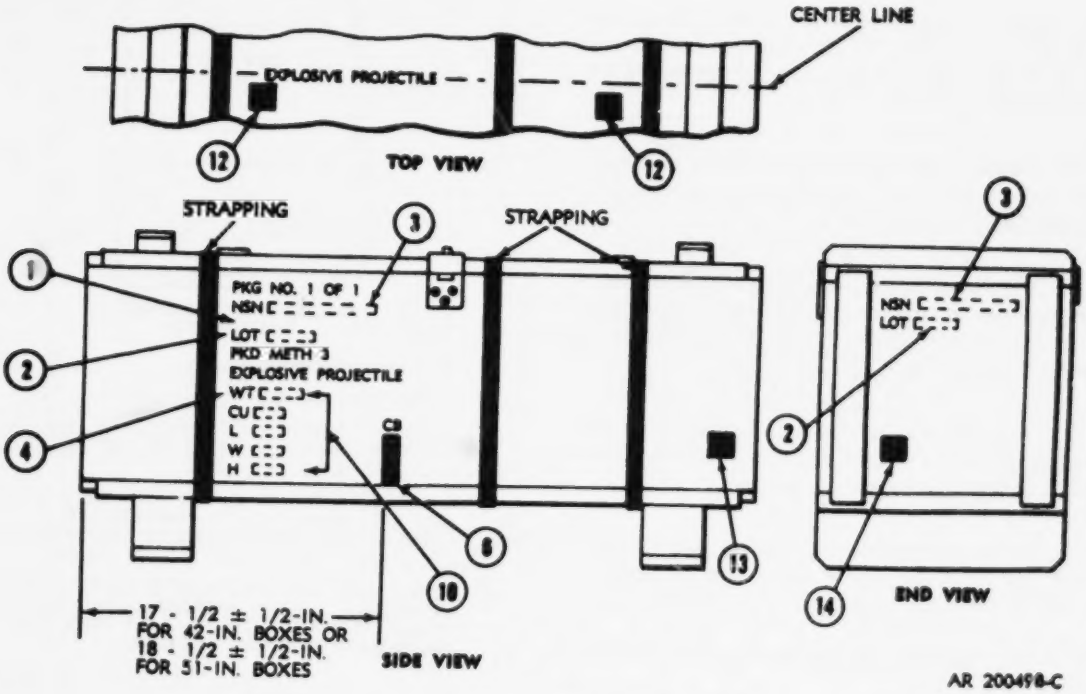


Figure 6-4 Marking of M424 Projectile Box

6-3 PACKAGING XM440 TRAINING PROJECTILE.

6-3.1 PROJECTILE CASE.

6-3.1.1 Remove cover from projectile case (fig. 5-2). Remove packaging materials. Place rubber cushion on floor near projectile.

6-3.1.2 Assure that marking of projectile agrees with figure 6-5.

6-3.1.3 Using at least two persons:

a. Place projectile upright on rubber cushion on floor.

b. Place long insert over ogive of projectile and slide slotted end down to meet protective band.

c. Place front container adapter over nose plug of projectile. Place rubber cushion on top of front container adapter, if not taped to long insert.

d. Raise case vertically (closed end up) over the projectile. Lower case to base of projectile.

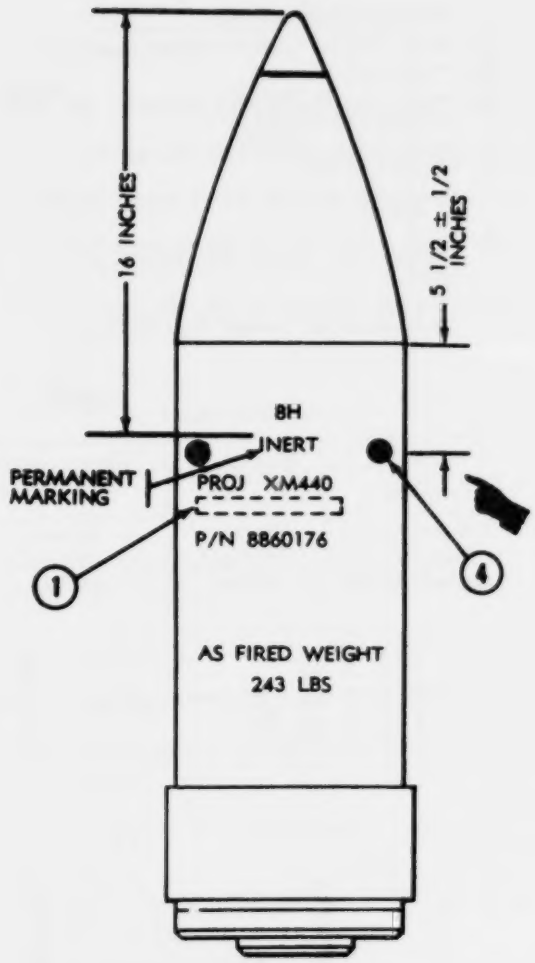
e. Tilt projectile case slightly and support projectile to prevent it from sliding out of case; slowly lower case to horizontal position.

f. Assure protective band cord is up and push projectile slowly, by hand, toward closed end of projectile case.

g. When projectile cannot be moved forward any farther, raise open end of case slowly to vertical position.

6-3.1.4 Complete packaging in accordance with figure 5-2.

6-3.1.5 Assure that marking of projectile case agrees with figure 6-6.



MARKING INSTRUCTIONS

(1)- INSERT LOT OR SERIAL NUMBER.

2 - EXTERIOR SURFACE OF PROJECTILE, EXCEPT FOR ROTATING BAND, WILL BE BRONZE NO. 17043 LACQUER, SPEC TT-L-50.

3 - MARKING WILL BE BLACK NO. 37038 LACQUER, SPEC TT-L-50 IN 1-INCH HIGH LETTERS. STENCILED MARKINGS NEED NOT BE IN LINE WITH PERMANENT MARKINGS.

(4)- APPLY FOUR 1-INCH DIAMETER DOTS AROUND PROJECTILE, SPACED APPROXIMATELY 90 DEGREES APART. LOCATE DOTS SO THAT THEY WILL NOT OBLITERATE EXISTING MARKING.

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Figure 6-5 Marking of XM440 Training Projectile

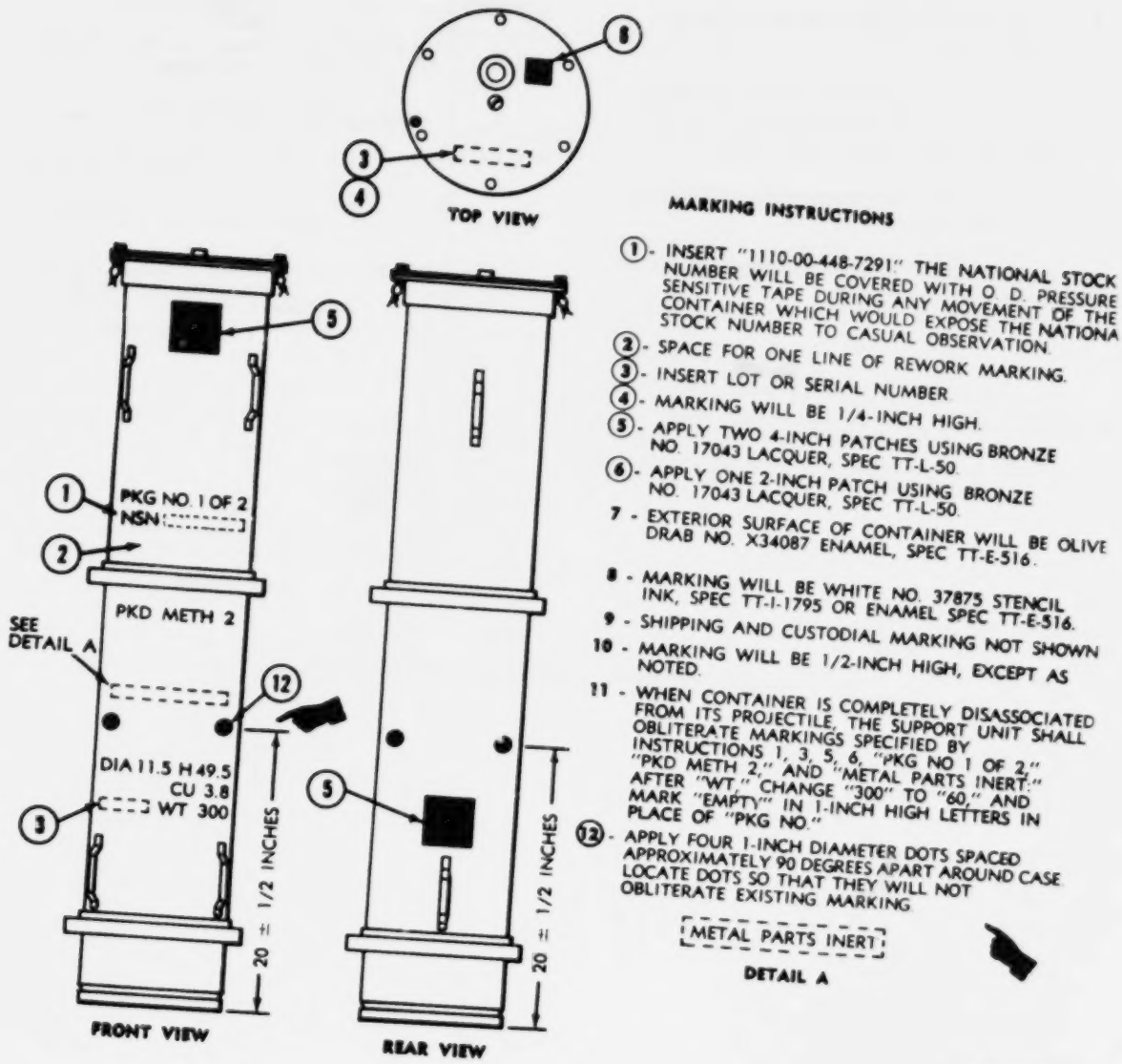

TOP VIEW
MARKING INSTRUCTIONS
1 - INSERT "1110-00-448-7291" THE NATIONAL STOCK NUMBER WILL BE COVERED WITH O. D. PRESSURE SENSITIVE TAPE DURING ANY MOVEMENT OF THE CONTAINER WHICH WOULD EXPOSE THE NATIONA STOCK NUMBER TO CASUAL OBSERVATION.
2 - SPACE FOR ONE LINE OF REWORK MARKING.
3 - INSERT LOT OR SERIAL NUMBER.
4 - MARKING WILL BE 1/4-INCH HIGH.
5 - APPLY TWO 4-INCH PATCHES USING BRONZE NO. 17043 LACQUER, SPEC TT-L-50.
6 - APPLY ONE 2-INCH PATCH USING BRONZE NO. 17043 LACQUER, SPEC TT-L-50.
7 - EXTERIOR SURFACE OF CONTAINER WILL BE OLIVE DRAB NO. X34087 ENAMEL, SPEC TT-E-516.
8 - MARKING WILL BE WHITE NO. 37875 STENCIL INK, SPEC TT-I-1795 OR ENAMEL SPEC TT-E-516.
9 - SHIPPING AND CUSTODIAL MARKING NOT SHOWN NOTED.
10 - MARKING WILL BE 1/2-INCH HIGH, EXCEPT AS
11 - WHEN CONTAINER IS COMPLETELY DISASSOCIATED FROM ITS PROJECTILE, THE SUPPORT UNIT SHALL OBLITERATE MARKINGS SPECIFIED BY INSTRUCTIONS 1, 3, 5, 6, "PKG NO 1 OF 2," "PKD METH 2," AND "METAL PARTS INERT:" AFTER "WT," CHANGE "300" TO "60," AND MARK "EMPTY" IN 1-INCH HIGH LETTERS IN PLACE OF "PKG NO."
12 - APPLY FOUR 1-INCH DIAMETER DOTS SPACED APPROXIMATELY 90 DEGREES APART AROUND CASE. LOCATE DOTS SO THAT THEY WILL NOT OBLITERATE EXISTING MARKING.
METAL PARTS INERT
DETAIL A
PKG NO 1 OF 2
NSN
PKD METH 2
SEE DETAIL A
DIA 11.5 H 49.5
CU 3.8
WT 300
20 ± 1/2 INCHES
FRONT VIEW
REAR VIEW
AR 200500-B

Figure 6-6 Marking of XM440 Projectile Case

6-3.2 ACCESSORY PARTS CASE.

a. Remove cover from accessory parts case. Remove contents.

b. Table 6-2 lists the contents of the accessory parts case.

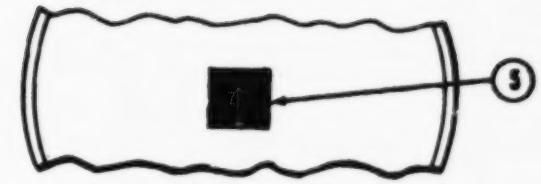
c. Assure that propellant charge marking agrees with figure 6-7 and marking of breechblock-fuze assembly agrees with figure 6-8.

d. Package the accessory parts case in accordance with figure 5-3.

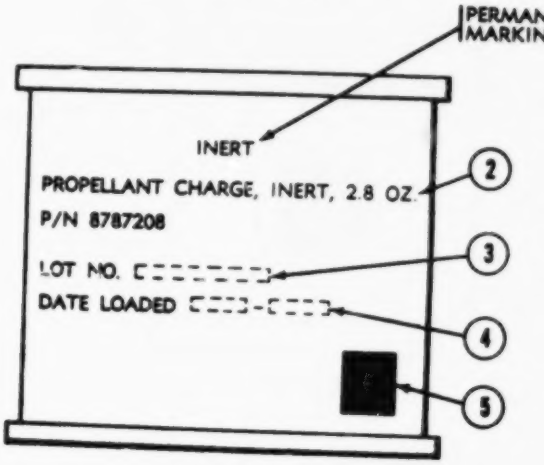
e. Assure that marking of accessory parts case agrees with figure 6-9.

TABLE 6-2
CONTENTS OF XM440 PROJECTILE ACCESSORY PARTS CASE

Quantity	Part No.	Description
1	8787202	Base Plug, Atomic Projectile, Training
1	8787205	Breechblock-Fuze Assembly, Atomic Weapon, Training: M542(T-316E1)
1	8787207	Disk, Support, Training
1	8787208	Propellant Charge, Nuclear Component, Training: Inert



END WITHOUT HOLE



FRONT VIEW

MARKING INSTRUCTIONS

1 - MARKING WILL BE WHITE NO. 37875 STENCIL INK, SPEC TT-I-1795, OR ENAMEL, SPEC TT-E-516, IN 1/4-INCH HIGH LETTERS.

(2) - NOMENCLATURE MAY BE STENCILED ON ONE OR TWO LINES.

(3) - INSERT LOT NUMBER.

(4) - INSERT DATE LOADED (MONTH AND YEAR).

(5) - APPLY TWO 1-INCH SQUARE PATCHES USING BRONZE NO. 17043 LACQUER, SPEC TT-L-50.

6 - EXTERIOR SURFACE OF CONTAINER WILL BE OLIVE DRAB NO. X34087 ENAMEL, SPEC TT-E-516.

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Figure 6-7 Marking of Inert Propellant Charge

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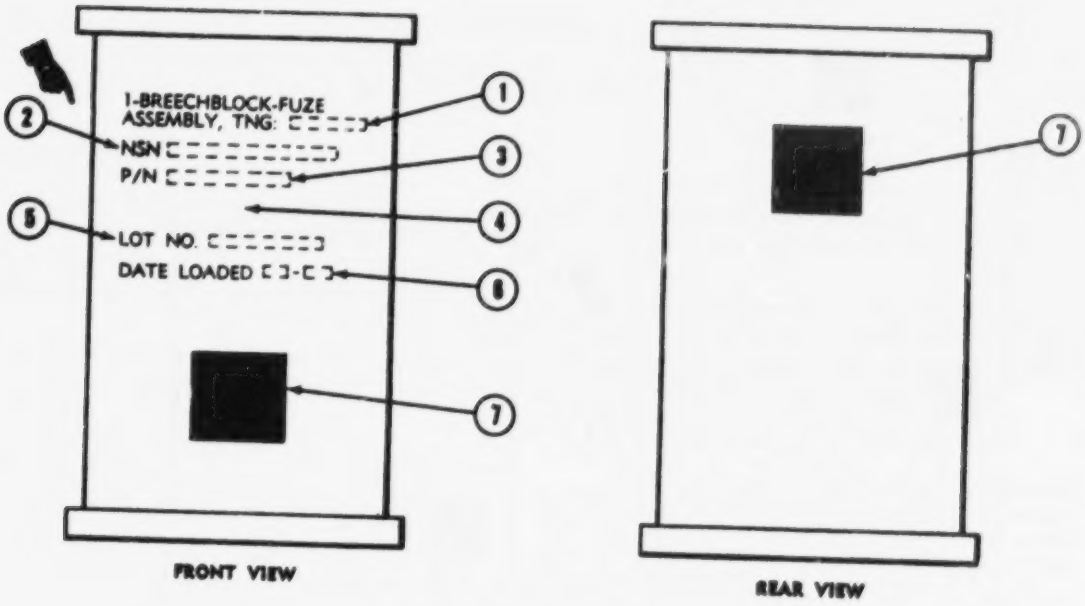
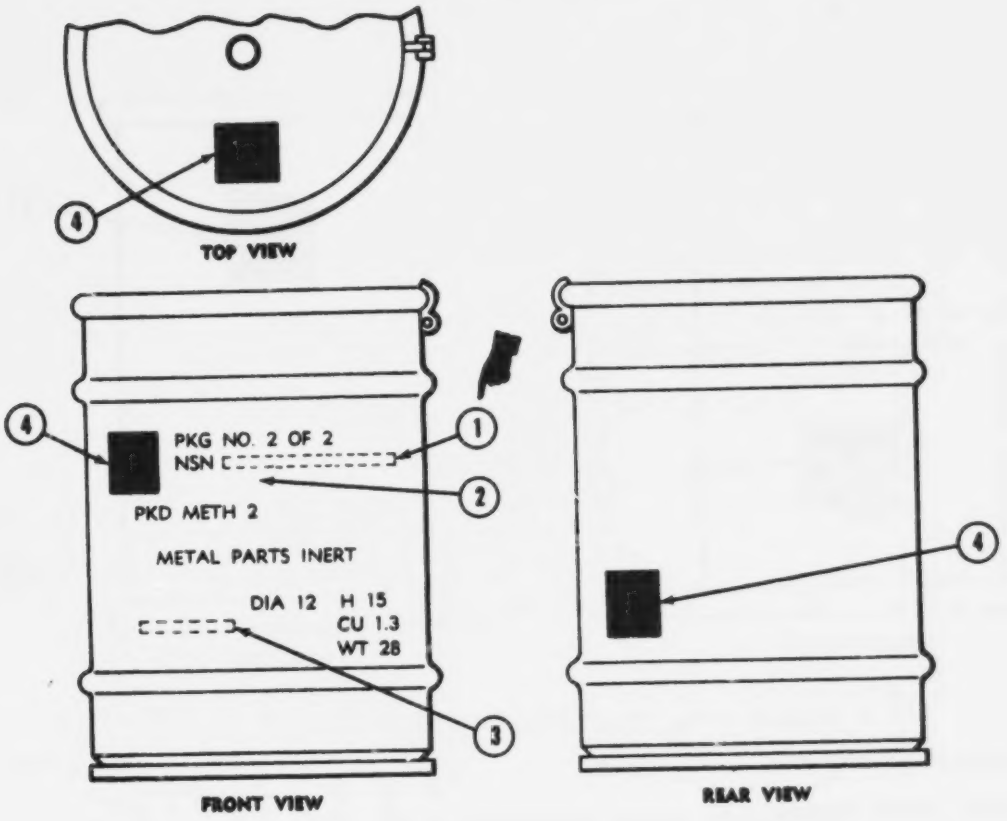


MARKING INSTRUCTIONS

(1)- INSERT "M542" (REGARDLESS OF EXISTING DESIGNATION).
(2)- INSERT "1110-00-506-0452."
(3)- INSERT "8787205."
(4)- SPACE FOR ONE LINE OF REWORK MARKING.
(5)- INSERT LOT NUMBER.
(6)- INSERT DATE LOADED (MONTH AND YEAR).
(7)- APPLY TWO 2-INCH SQUARE PATCHES USING BRONZE NO. 17043 LACQUER, SPEC TT-L-50.
8 - EXTERIOR SURFACE OF CONTAINER WILL BE OLIVE DRAB NO. 34087 ENAMEL, SPEC TT-E-516.
9 - MARKING WILL BE WHITE NO. 37875 STENCIL INK, SPEC TT-I-1795 OR ENAMEL, SPEC TT-E-516, IN 1/4-INCH HIGH LETTERS.

AR 200502-A

Figure 6-8 Marking of Training Breechblock-Fuze Assembly Container



MARKING INSTRUCTIONS

(1). INSERT "1110-00-448-7291" THE NATIONAL STOCK NUMBER WILL BE COVERED WITH O. D. PRESSURE SENSITIVE TAPE DURING ANY MOVEMENT OF THE CONTAINER WHICH WOULD EXPOSE THE NATIONAL STOCK NUMBER TO CASUAL OBSERVATION.

(2). SPACE FOR ONE LINE OF REWORK MARKING.

(3). INSERT LOT OR SERIAL NUMBER.

(4). APPLY THREE 2-INCH SQUARE PATCHES USING BRONZE NO. 17043 LACQUER, SPEC TT-L-50.

5 - EXTERIOR SURFACE OF CONTAINER WILL BE OLIVE DRAB NO. X34087 ENAMEL, SPEC TT-E-516.

6 - MARKING WILL BE WHITE NO. 37875 STENCIL INK, TT-I-1795 OR ENAMEL, SPEC TT-E-516, IN 1/4-INCH HIGH LETTERS.

7 - SHIPPING AND CUSTODIAL MARKING NOT SHOWN.

8 - WHEN CONTAINER IS COMPLETELY DISASSOCIATED FROM ITS CONTENTS, THE SUPPORT UNIT SHALL OBLITERATE MARKING SPECIFIED BY INSTRUCTIONS 1, 3, 4, "PKG NO. 2 OF 2," "PKD METH 2," AND "METAL PARTS INERT," AFTER "WT," CHANGE "28" TO "13" AND MARK "EMPTY" IN 1-INCH HIGH LETTERS IN PLACE OF "PKG NO."

AR 200503-A

Figure 6-9 Marking of Accessory Parts Case

SECTION 7

MAINTENANCE

7-1 GENERAL.

7-1.1 This section provides maintenance information for the M424 and XM440 projectiles and containers. This information is also applicable to tools and handling equipment.

7-1.2 If maintenance beyond the instructions in this section is required, notify support unit.

7-1.3 Cannibalization of unserviceable weapons to produce one or more serviceable weapons is authorized when specifically directed by competent authority during a defense emegency when paragraph 3 of the weapon system safety rules (AR 50-103) applies or when specifically directed by US AMCCOM. Cannibalization will be limited to the maintenance authority and capability of the organization.

7-2 CLEANING.

a. Remove fungus growth from metal surfaces, other than the mechanical time fuze, as follows: Abrade surfaces with abrasive cloth or paper. Abrade only to the extent required to remove fungus from metal surfaces. If the area of contamination is large, brush the surface with a stiff-bristled brush and abrade with abrasive cloth or paper. When abrading or brushing, prevent particles from entering interior area of the projectile components. Wipe the abraded surfaces with a clean cloth moistened with cleaning compound MIL-C-81302.

b. Remove grease or oil from unpainted surfaces using a clean cloth moistened with cleaning compound MIL-C-81302.

c. Remove rust, corrosion, or other foreign material, except on rotating band and obturator, with a wire brush and abrasive cloth or paper. Use copper wool on rotating band and obturator. Remove metal particles with a clean cloth.

d. Remove dust, grease, or other foreign material from painted or marked area with a soft cloth and detergent and water.

e. Use cleaning compound MIL-C-81302 to clean rubber parts.

f. Hand oiler NSN 4930-00-985-2604 may be used for application of cleaning compound MIL-C-81302. Identify oilers containing this cleaning compound clearly, using any suitable method, so that no other material is placed in the oiler.

7-3 LUBRICATION.

a. Male threads of components should be lubricated with a light coating of molybdenum disulfide (black lubricant) mixed with cleaning compound MIL-C-81302. The mixture shall be a thin consistency suitable for brush application and quick drying. After it has dried, the coating should be buffed with a clean, dry cloth. The spotting projectile ogive threads which mate with the body assembly should be lubricated with a light coat of silicone grease.

b. Lubricate exposed surfaces of preformed packing on base plug with a light coat of silicone grease. Do not use molybdenum disulfide and cleaning compound mixture on preformed packing. No lubrication of preformed packings on container is required.

c. No lubrication is authorized for the breechblock-fuze assembly and mechanical time fuze.

d. Lubricate male threads of H4172 extractor with a light coating of general-purpose lubricating oil. Coat extractor bearings and plates with grease MIL-C-23827 before repackaging the extractor.

e. Clean tools and coat them with a light film of lubricating oil after use.

7-4 PAINTING.

a. Remove foreign material in accordance with applicable procedures in paragraph 7-2.

b. Apply one coat of primer coating TT-P-664 to exposed base material. Allow at least 25 minutes air-dry time.

c. Apply two coats of enamel TT-E-516 over primer coatings. Allow at least 15 minutes air-dry time for each coat. The shade of color need not be the exact shade of the original.

d. If the word "INERT" is permanently marked and has been painted over too heavily to read, use a pointed instrument to clean out the letters, then apply a thin finish coat of applicable enamel over the word "INERT".

e. Missing, incorrect, or illegible markings or portions thereof may be applied freehand or by any other suitable method using stencil ink or enamel.

7-5 REMOVING SCRAPES AND ABRASIONS AND REPAIRING THREADS.

a. Abrasions, scrapes, burrs, sharp edges, or raised sharp edges of nicks, scratches, or gouges can be removed by the use of a fine-cut file, stone, or abrasive cloth or paper. Do not attempt to completely level the surface where the repair has been performed. Finish dressing any filed surface by abrading with abrasive cloth or paper. Wipe abraded surfaces with a clean, dry cloth to remove residue. Use copper wool or stone to dress scrapes and abrasions on rotating bands and obturators.

b. Reshape (dress) affected area with a fine file or stone to the original contour to the extent practicable so that component can be assembled to the mating component in a normal manner. Finish dressing the area by abrading with abrasive cloth. Clean abraded areas. Threads that are stripped or crossed shall not be repaired and the component shall be rejected.

7-6 REPLACEMENT OF HUMIDITY INDICATOR CARD.

a. Grip hex-head of H690 socket with a suitable wrench. Place H690 socket on face of indicator housing and engage slots in the housing.

b. Grip hex-head of H691 socket with a suitable wrench. Place H691 socket on face of retaining ring, engage slots, unscrew and remove retaining ring from indicator housing.

c. Remove indicator plate and humidity indicator card.

d. When it is necessary to replace a window and/or gasket, remove window and gasket carefully. Insert and seal gasket 8791668 properly on ledge of housing. Install window into indicator housing.

e. Install new humidity indicator card with marking toward window.

f. Insert indicator plate, center portion outward, in indicator housing.

g. Install retaining ring with notches outward. Torque retaining ring to 75 ± 5 inch-pounds.

7-7 REPLACEMENT OF HUMIDITY INDICATOR PLUG.

a. Grip the hex-head of the H690 socket with a suitable wrench. Place the H690 socket on the face of indicator housing (outside of case) and engage the slots in the housing. Using a suitable wrench, grip the plain hex-nut (inside of case). Unscrew and remove the humidity indicator plug from the case.

b. Assure that the humidity indicator plug gasket is correctly positioned on the humidity indicator plug.

c. Insert indicator housing into the case from the outside.

d. Engage slots on face of indicator housing (outside of case) with the H690 socket, and with a suitable wrench on inside of case, thread the plain hex-nut on threaded end of indicator housing.

e. Apply 32 ± 2 foot-pounds torque to the plain hex-nut (or indicator housing, when nut is not accessible for torque wrench) of humidity plug in case.

SECTION 8

STORAGE

8-1 GENERAL.

This section provides information for storage of the XM440 projectile. For storage information applicable to the M424 projectile, refer to TM 9- 1300-206.

8-2 GENERAL STORAGE REQUIREMENTS.

Storage facilities for projectiles in the assembled storage configuration must prevent exposure to temperatures in excess of 150°F or below -40°F. If limits are exceeded, notify support unit.

SECTION 9

TRANSPORTATION

9-1 GENERAL.

Guidance and supplementary data pertinent to transportation, safety, and security may be obtained from the support unit.

9-2 TRANSPORTATION RESPONSIBILITIES.

The theater commander is responsible for arranging the movement of projectiles to battery sites.

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APPENDIX A

RECOMMENDED ORGANIZATIONAL MAINTENANCE REPAIR PARTS AND TOOLS LIST FOR NON-U. S. NATO UNITS

A1-1 GENERAL.

This appendix is a list of recommended items for organizational maintenance of the M424 and XM440 projectiles. Non-U. S. units are not required to stock items listed in this appendix; however, they should have on hand those tools required to accomplish their mission.

A1-2 REQUISITIONING.

The list of recommended repair parts, tools, and equipment contains part numbers to identify the recommended items. Requisitions will be submitted through host nation supply channels.

RECOMMENDED REPAIR PARTS AND TOOLS LIST

Description	Unit of issue	Qty inc in unit
FOR PROJECTILE, 8 INCH: M424A1 (8811860-3)		
BAND, PROTECTIVE, ATOMIC PROJECTILE: (grommet) (9257440)	EA	1
FUZE, MECHANICAL TIME: M591 (10535728)	EA	1
FOR PROJECTILE, ATOMIC, 8-INCH, TRAINING: XM440 (Packaged in projectile case and accessory parts case.) (8848826)		
BAND, PROTECTIVE: (8795680)	EA	1
BREECHBLOCK-FUZE ASSEMBLY, TRAINING: (8787205)	EA	1
HOLDER, ACTIVATED DESICCANT: (8858450)	EA	1
PACKING, PREFORMED: (on base plug) (MS9068-237)	EA	1
XM440 PROJECTILE PACKAGES		
FOR PROJECTILE CASE (Pkg 1 of 2)		
BOLT, MACHINE: S, cd- or zn-pltd, 5/16-18UNC-2A x 1 in. lg (MS35297-34)	EA	4
BOLT, MACHINE: S, hex-hd, 5/16-18UNC-2A x 1-1/2 in. lg (8795692)	EA	2
COVER, SHIPPING AND STORAGE CONTAINER: (8835127)	EA	1
GASKET: (for plug) (8795696)	EA	1
INDICATOR, HUMIDITY PLUG: (8791666)	EA	1

APPENDIX A - Continued

Description	Unit of issue	Qty inc in unit
INSERT, SHIPPING AND STORAGE CONTAINER: (long) (8795693)	EA	1
INSERT, SHIPPING AND STORAGE CONTAINER: (short) (8795694)	EA	1
PACKING, PREFORMED: (8795695)	EA	1
PLUG, MACHINE THREAD: (8795698)	EA	1
WASHER, LOCK: S, cd- or zn-pltd, split, helical, for 5/16 in. screw size (MS35337-26)	EA	6
FOR ACCESSORY PARTS CASE (Pkg 2 of 2)		
INDICATOR, HUMIDITY PLUG: (8791666)	EA	1
NUT, PLAIN, HEXAGON: 5/16-18UNC-2B (MS51967-6)	EA	1
RING, LOCKING, METAL DRUM COVER: MS63048-31)	EA	1
SCREW, MACHINE: S, hex-hd, 5/16-18UNC-2A x 3 in. lg (8886549)	EA	1
SEAL, RUBBER: (MS63048-41)	EA	1
VENT ASSEMBLY: (8853791)	EA	1

Description	Unit of issue	Qty inc in unit
EXPENDABLE CONSUMABLE CLEANING AND PRESERVING MATERIALS		
ADHESIVE: syn-ru, liquid, general purpose (801592)	QT	
BARRIER MATERIAL, WATER VAPORPROOFED, FLEXIBLE: 36 in. w, 200 yd lg (MIL-B-131, class III)	RO	
BRUSH, STENCIL: 13/16 in. dia at ferrule, long hdl (H-B-621, type 1, class 1)	EA	
BRUSH, VARNISH: hog bristle, fl, w/chisel edge, 2 in. w, 2-5/16 in. exposed lg (801545)	EA	
CHIPBOARD: filler, plain, no liner, natural color, 96 in. lg, 48 in. w, 1/16 in. thk (UU-C-282, class 2)	BD	
CLEANING COMPOUND, SOLVENT: MIL-C-81302	DR	
CLOTH, ABRASIVE: ferric oxide and quartz, closed coating, 9 in. w, 11 in. lg (8400888)	SL	
CLOTH, CHEESECLOTH, COTTON: natural color, unshrunk, 38-1/2 in. w (CCC-C-440, type I, class 1)	RL	
CORD, NYLON: 1/16 in. dia (MIL-C-5040)	SL	

APPENDIX A - Continued

Description	Unit of issue	Qty inc in unit
CUSHIONING MATERIAL, PACKAGING: bound fibers, 24 in. w, 1/8 in. thk, 600 in. lg (MIL-P-13607, type I)	RO	
CUSHIONING MATERIAL, PACKAGING: bound fibers, 24 in. w, 1/4 in. thk, 600 in. lg (MIL-P-13607, type I)	RO	
CUSHIONING MATERIAL, PACKAGING: 3/4 in. thk (PPP-C-1120, type IV)	SH	
DESICCANT, ACTIVATED: USS sieve size 1/2 in. No. 80, not impregnated w/moisture indicator, 4 units per bag, 500 bags per 200 lb drum (MIL-D-3464, class II) (8790673)	DR	
ENAMEL: olive drab, No. X34087, lusterless (TT-E-516)	CN	
ENAMEI: white, No. 37875, lusterless, 1-pt pressurized can (TT-E-516) (81348)	PT	
ENAMEL: yel, No. 33538 lusterless, 1 qt can (TT-E -516) (81348)	QT	
FIBERBOARD, CORRUGATED: (PPP-P-291, type II, class 2)	SH	
FIBERBOARD, CORRUGATED: 36 in. w, 36 in. lg (PPP-F-320)	SH	
GREASE, AIRCRAFT AND INSTRUMENT: 1-lb can (MIL-G-23827)	LB	
GREASE, SILICONE, INSULATED ELECTRIC MOTOR: (MIL-L-15719A, type A, class 2) (8794437)	TU	
INK, MARKING STENCIL: white, No. 37875, opaque, liquid, for porous and nonporous surfaces, 1-pt pressurized can (TT-I-1795) (81348)	PT	
INK, MARKING STENCIL: yel, No. 33538, opaque, liquid, for nonporous surfaces (TT-I-1795)	CN	
INK, MARKING STENCIL: yel, No. 33538, opaque, liquid, for porous surfaces (TT-I-1795)	CN	
I ACQUER: acrylic, bronze, No. 17043, type II, 1-pt pressurized can (TT-L-50) (81348)	PT	
LACQUER: cellulosic, blk, No. 37038, lusterless, 1-pt pressurized can (TT-L-50) (81348)	PT	

APPENDIX A - Continued

Description	Unit of issue	Qty inc in unit
LUBRICATING OIL, GENERAL PURPOSE: corr and salt spray res, 20 deg F max pour pt (MIL-L-3150)	QT	
MOLYBDENUM DISULFIDE, TECHNICAL: powder (MIL-M-7866)	LB	
PAPER, ABRASIVE: garnet, 4/0 open type, 9 in. w, 11 in. lg (P-P-121, cl 1)	PG	
PRIMER COATING: zn-chromate, 1 gal (TT-P-664)	GL	
PRIMER COATING: zn-chromate, pressurized can, 1 pt (TT-P-664)	PT	
RUBBER SHEET, CELLULAR: 36 in. lg, 36 in. w, 0.500 in. thk (MIL-C-3133, RS12)	SH	
RUBBER SHEET, CELLULAR: syn-ru, blk, 48 in. lg, 36 in. w, 1 in. thk (MIL-C-3133, RS12, A, B, F) (806354)	SH	
SEAL, METALLIC: circular, 3/8 in. od, 2 holes, w/tn-ctd cop. wire No. 22 or 23 AWG, 2 strand, 9 in. lg (8794342)	EA	
SEAL, STRAPPING: 2-7/16 in. lg (805418)	BX	
STEEL STRAPPING, FLAT: 1/64 in. thk, 5/8 in. w (QQ-S-781, type I, class B) (945012)	CL	
STENCILBOARD: oiled, 36 in. lg, 24 in. w, 1/64 in. thk	SH	
TAPE, PRESSURE SENSITIVE ADHESIVE: cloth backing, opaque, olive drab, 2 in. w, 60 yd lg (PPP-T-60, class 1)	RO	
TAPE, PRESSURE SENSITIVE ADHESIVE: cloth backing, opaque, olive drab, 1 in. w, 60 yd lg (PPP-T-60, class 1)	RO	
TAPE, PRESSURE SENSITIVE ADHESIVE: plastic backing, opaque, yel, 1 in. w, 36 yd lg (PPP-T-66, type 1, class B) (81348)	RO	
TAPE, TEXTILE: linear, selvaged edge, olive drab, 1/2 in. w, 720 yd lg (DDD-T-86, class 3)	RO	
THINNER, SYNTHETIC RESIN ENAMEL: (TT-T-306)	CN	

APPENDIX A - Continued

Description	Unit of issue	Qty inc in unit
SPECIAL TOOLS AND HANDLING EQUIPMENT		
FUZE SETTER: H4003 (8592962)	EA	
GAGE, FLUSH PIN, ATOMIC PROJECTILE: T4075 (8800308)	EA	
EXTRACTOR, ATOMIC PROJECTILE: H4277 (9234840)	EA	
HANDLING TOOL, PROJECTILE INSERT: H4020 (8794598)	EA	
SOCKET, WRENCH, FACE SPANNER: H690 (321344-00)	EA	
SOCKET, WRENCH, FACE SPANNER: H691 (321345-00)	EA	
WRENCH, FUZE: M18 (7231161)	EA	
WRENCH, SPANNER: H4004 (8787887)	EA	
WRENCH, SPANNER: H4005 (8787890)	EA	
WRENCH, SPANNER: H4006 (8787895)	EA	
WRENCH, SPANNER: H4007 (8787874)	EA	

APPENDIX A - Continued

Description	Unit of issue	Qty inc in unit
COMMON TOOLS AND EQUIPMENT		
ADAPTER, SOCKET WRENCH: 3/8 in. male and 1/2 in. female, sq-end (u/w torque wrench)	EA	
BRUSH, FILE CLEANER: OR	EA	
BRUSH, WIRE SCRATCH:	EA	
CAN, PLUNGER, FLAMMABLE LIQUID: (solvent dispenser)	EA	
FILE, THREAD RESTORER:	EA	
FILE SET, HAND:	EA	
HAMMER, HAND: non-metallic	EA	
FACE, HAMMER, INSERTED: medium plastic	EA	
FACE, HAMMER, INSERTED: tough plastic	EA	
PLIERS, DIAGONAL CUTTING:	EA	
PRESS, LEAD SEAL, HAND:	EA	
SCREWDRIVER, FLAT TIP: 7/16 in. w/flared tip	EA	
SHEARS, STRAIGHT TRIMMERS:'	EA	
SOCKET, SOCKET WRENCH: 1-5/8 in. socket, 1/2 in. sq-drive	EA	
SOCKET, SOCKET WRENCH: 3/4 in. socket, 3/8 in. drive (u/w H-690 and H-691)	EA	
SOCKET, SOCKET WRENCH: 1/2 in. socket, 3/8 in. drive (used to torque bolts on M500 cover)	EA	
STEEL STRAPPING AND SEALING KIT AND CUTTER: 5/8 in. w x 0.023 in. thk strap capacity, consists of 1-box strapping seals, 1-sealer, and one 50 lb coil of strapping	EA	
STONE, SHARPENING:	EA	
TACKER, STAPLE: gun type	EA	
THERMOMETER, SELF INDICATING:	EA	
WRENCH, BOX AND OPEN END COMBINATION: 1/2 in.	EA	
WRENCH, BOX AND OPEN END COMBINATION: 9/16 in.	EA	
WRENCH, PIPE: strap type	EA	
WRENCH, TORQUE: 1/2 in. drive 175 ft-lbs	EA	

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
General, United States Army
Chief of Staff

Official:

VERNE L. BOWERS
Major General, United States Army
The Adjutant General

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